the astrogram

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June 10, 1971

National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

Ames Savings Bond Drive at End

An intensive effort has been made this week to acquaint Ames employees with the benefits of saving through the purchase of U.S. Savings Bonds.

The annual campaign, under the chairmanship of Stan Miller, Public Affairs Officer, started on Monday, June 7 and will continue through Friday, June 11.

Twenty-four coordinators and over 100 canvassers have been spending the week personally explaining the many advantages of the program. Their message includes the importance of participation in the payroll savings plan, the stability of the program from a financial standpoint, and the benefits to the economic well-being of this country.

Beside pointing out the merits of the plan to new subscribers, employees already taking part in the savings plan are being encouraged to increase their present allotment.

Apollo Crew to Perform 5 EVA's

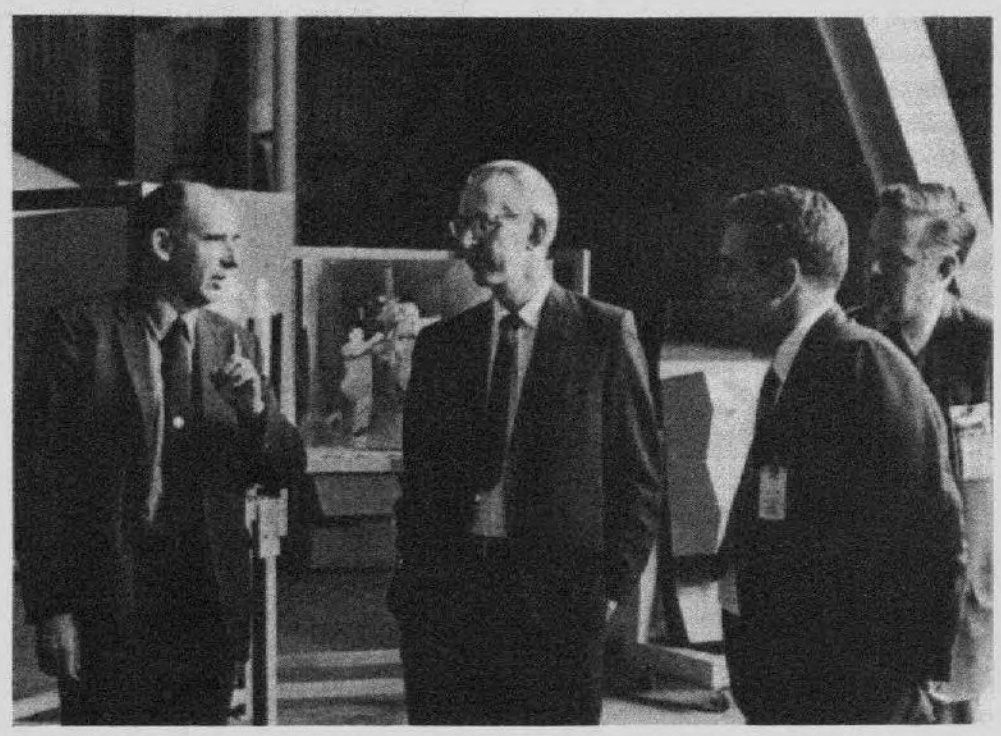
Apollo 15 astronauts David R. Scott, James B. Irwin, and Alfred M. Worden are scheduled to don space suits for work in the vacuum of space five times during the next lunar exploration mission.

The five extravehicular activities (EVA) will total more than 21 hours, exceeding the combined EVA time of all previous Apollo flights.

NO QUARANTINE

For this flight and the remaining two Apollo flights NASA officials have decided to discontinue quarantine of the returned astronauts, spacecraft and lunar materials. This determination was made on the basis of analysis of Apollo 11, 12 and 14 and the conclusion that no hazard exists to man, animal or plant in the lunar material.

Apollo 15 is scheduled for launch from the Kennedy Space Center on July 26.



NASA ADMINISTRATOR . . . Dr. James C. Fletcher (second from left) visited the Ames Center recently for briefings and a tour of facilities. In this photo Bradford H. Wick (left), Chief of the Full-Scale and Systems Research Division, explained the research on the F-14 and F-15 aircraft presently underway in the 40-by-80-Foot Wind Tunnel. David H. Hickey (second from right), Assistant Chief of the Large Scale Aerodynamics Branch, outlined the procedure for moving models into the test section of the wind tunnel and showed a model and photos of the tunnel in operation. Warren E. Anderson (far right), Aerodynamics Branch, reviewed the research on inlet testing for the F-14 and explained the technical photographs shown in the background.

During his tour Dr. Fletcher was also briefed on the operation of the Flight Simulator for Advanced Aircraft and visited the Ames Airplane Hangar. While there, he viewed the Ryan XV-5B aircraft as it was undergoing tests on the flight ramp.

U-2 RESEARCH AIRCRAFT . . . The first of two Lockheed aircraft (shown here) arrived last Thursday at the Center and the second was flown in on Friday. The aircraft, designated "Earth Survey Aircraft No. 4 and 5" were flown to Ames by Lockheed pilot Ivor Webster. The planes are capable of sustained flight at very high altitudes and are expected to expand the Ames Airborne Research Program and to provide ideal platforms for remote sensing of large areas.

Objectives of the experimental program are: to simulate over four ecological test areas in the United States as closely as possible the data output of the Earth Resources Technology Satellite (ERTS) scheduled for launch in 1972; collect data over various test sites simultaneously with passes of ERTS satellites and Skylab; support Earth resources survey programs of other agencies; and to conduct observations in astronomy, atmospheric physics and geophysics for NASA's Physics and Astronomy programs.

Marcelline Smith Featured Speaker

Mrs. Marcelline C. Smith, Staff Specialist in the Computation Division, was the featured speaker at the fiftieth anniversary meeting of the Oregon Home Economics Association held recently in Portland. Mrs. Smith spoke at the concluding banquet of the two-day affair.

In her talk Mrs. Smith dealt with the home of tomorrow as a space by-product. Space research, she pointed out, has, and will continue to influence the home through advances in communication, education, ecology, medicine and computers. She concluded her address with a challenge to the home economists to be intellectual by-products of space through their awareness, interest and especially their participation.

NEW LAUNCH DATE

Ames PAET Launch Set for June 16

The Ames-managed Planetary Atmosphere Experiments Test (PAET) spacecraft at press time was undergoing pre-launch preparation and the launch crew reports all looks good for a June 16 launch from NASA's Wallops Station in Virginia. PAET manager is David E. Reese, Jr., Assistant Chief of the Vehicle Environment Division.

DELAY

A two-day delay in the launch was necessary because of antenna problems encountered by the telemetry ship the U.S.S. Vanguard during rough seas following the Mariner-Mars launch in which the ship participated.

Minority Firm Scores Success at Ames

A minority owned and operated firm has had an outstanding success at Ames under the Small Business Administration's program to encourage growth and development of such firms.

Under a presidential executive order, the SBA can authorize the award by federal agencies of negotiated contracts to qualified minority firms without competitive bidding. Last year such a contract was negotiated by SBA with Dependable Janitorial Service, Oakland, Calif., for $30,000 to handle window washing at the Center.

As part of the program, the SBA provides management advice and counseling to the minority firm, as needed.

Last month Ames solicited competitive bids for all janitorial services at the Center for one year.

Dependable won two of three segments of the work, underbidding 21 other firms with a low figure of $258,000. The Dependable bid was based on a study of janitorial work at Ames and detailed cost estimates. The third segment of the Ames janitorial work went to Diamond Janitorial, Emeryville, Calif., with a bid of $140,000.

"This is a good example of the purposes of this program," commented Alvin Hertzog, Director of Procurement at Ames. "Dependable got business against heavy competition, and without special treatment."

CONTRACT SIGNED . . . Moses Jacko (left) and Alywishus Jacko (right), representing Dependable Janitorial Service of Oakland, Calif., were at Ames recently to receive the quarter-million-dollar contract being signed by John C. Delaney, Assistant Chief of Procurement. The contract for services at the Center was won in competition with 21 other firms. Alvin S. Hertzog, Ames Procurement Chief at Ames, standing, witnessed the contract signing.

Student Visitors from Mexico

MEXICAN STUDENTS . . . from Escuela Preperatoria de la Universidad de Sonora, a high school attached to the University of Sonora in Hermosillo, Mexico, recently toured the Ames Center. Their visit to this country was reciprocal. Last year a Spanish class of 20 students from Fremont High School in Sunnyvale traveled by bus to Hermosillo and stayed with Mexican families with children of high school age. The week-long visit was designed to familiarize students with Mexican culture and to give them an opportunity to converse with Spanish speaking peoples. This year the Mexican students were hosted by the Fremont studies for the same purpose. In this photograph four of the 16 student-visitors listen to Robert Davis (left, Fremont Spanish Instructor, as he interprets a briefing on the equipment in the Ames 990 aircraft.

History of Ames

Copies of the paperback edition of the "History of Ames" by Edwin Hartman are still available in "The Astrogram" Office. The price is $4.

NASA Stamp Club Offer

Manned Spaceflight Covers will commemorate the various events of Apollo 15, the Fifth Manned Lunar Landing Mission, by Astronauts Scott, Worden, and Irwin now scheduled for launch July 26. Included will be the launch from Cape Kennedy, as well as events cancelled in Houston of the lunar orbit, lunar landing, EVA on the Moon, Moon launch, return lunar orbit, splashdown, and others of importance to specialists in space cover collecting. The covers will be a four-color process franked with an appropriate space stamp. Advance orders are now being accepted for this important mission.

Advance order blanks for Apollo 15 may be obtained by writing Manned Spaceflight Covers, P.O. Box 10791, Houston, Texas 77018. Send check or money order with a self addressed envelope with an eight cent postage stamp for each three covers ordered. The price is 50 cents for each cover with a free cover given for a $5 purchase or more.

Covers are still available for collectors who may have missed the Manned Spaceflight cachets for Apollo 12, 13, and 14.

MEETING, JUNE 15

Finance Class

A representative of Personal Financial Development, which will begin its fifth quarter of classes in the Ames closed-circuit TV classroom on June 21, will be available to give additional information about the seminar at noon, June 15 in Room 149, Building 241.

The seminar is being offered by the Association for Continuing Education (ACE) via the Instructional Television Network. As a result of the Center's membership in the ACE network the seminar tuition fee is $65 rather than $75 as announced previously.

Have You Seen This Art Object ?

HAVE YOU SEEN THIS ART OBJECT? The glass sculpture illustrated is part of a trilogy loaned to the Ames Library for temporary display by the Group 21 Galleries of Los Gatos. Anyone having information concerning this sculpture is asked to call Ralph Lewis, Chief of the Library Branch, ext. 3312.

The Astrogram
Room 134
Admin. Mgt. Building
Phone 2385

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Editor . . . . . Dot Evans
Reporters . . . . . NASA Employees

Deadline for contributions:
Thursday between publication dates

Ames Explorer Post 12 Loses Advisor

Astronautics Explorer Post 12 is losing it's Post Advisor. William A. Page, Chief of the Hypersonic Free-Flight Branch, has been the advisor since the Post was organized two years ago. Although he has enjoyed his work with the troop, he feels it is time to allow another to take over the lead.

Unfortunately, as yet no one has shown an interest in assuming that lead. It appears to be easier to discuss the direction young people are taking than to give direction to their activities.

Over the past two years Mr. Page has organized Explorer projects in such diverse areas of Astronautics as Lunar Geology, Pollution in the Bay Area and Laser Science.

During a recent interview Mr. Page stated that as Post Advisor, he has functioned primarily as an organizer. He simply "got things going"; contacted engineers and scientists to speak to the troop, demonstrate equipment and conduct tours.

As Post Advisor, some of his most enjoyable moments came as the projects ended. The enthusiasm of the Explorers was invariably matched by the enthusiasm of the particpating scientists. According to Mr. Page, he has been met with "magnificent cooperation from the scientists at the Center" It is this cooperation that undoubtedly kindled much of the Explorers' interest in their Post. Mr. Page's philosophy of Explorer Scouting also has been responsible for a great part of that interest.

A person who understands young men, he feels their interest cannot be maintained with "straight lecture." He said; "the boys should be allowed to twist knobs, turn dials and perhaps break things, if necessary." Also, a part of Mr. Page's philosophy is to expose the scouts to as many career facets and people involved in Astronautics as possible.

It is this philosophy that has allowed an interchange of ideas between scouts and professionals and a growing familiarity for the Scouts with the machines and equipment used in Astronautics. It is also this philosophy and Mr. Page's efforts over the past two years that have made Explorer Post 12 a success.

STUDY OF BODY

The study of the human body has increased tenfold under the spur of the needs of the space program, reports a medical consultant.

AIAA Conference

The Fourth Fluid and Plasma Dynamics Conference will be held at the Cabana Hyatt House in Palo Alto, on June 21-23, 1971.

This National Conference will present eleven half-day sessions devoted to aerodynamics, fluid mechanics and environmental systems and two half-day sessions devoted to plasma and laser technology.

For more information on registration, papers and wine tasting, please contact Dennis Tanner at extension 2137.

"Thank You" Notes

"Retirement Luncheon! I have long dreaded the thought. I have even stated that I did not want a Retirement Luncheon or a Retirement Album of pictures. Sentimental things of which I wanted no part. When my time came I kept saying, I just wanted to walk out the door.

All such rash statements are hereby retracted.

The Retirement Luncheon for Jo Daugherty and for me was a thoroughly enjoyable affair.

The gifts for me were right on. A long needed filing cabinet. (Francis will be glad to throw out those cartons of stuff which now clutter the floor of my den.) And a check toward purchase of a camera - this time for fun (I keep saying).

My thanks to those whose efforts put the Luncheon together. My appreciation to those whose presence made it such a pleasant affair.

Sincerely,
Fred Swartz"

"Since it is impossible for me to thank, individually, all of you who honored me by your presence at my retirement luncheon, I trust this note will express my deep and happy appreciation for your many good wishes.

Also, I wish to thank all those who could not attend the luncheon but who expressed their good wishes to me in person, by letters, and by phone calls.

And thank you again for the wonderful gifts. I love them and shall make good use of them.

I send my best wishes to all of you.

Josephine "Jo" Daugherty"

"Dear Friends,

Thank you so much for the lovely gifts and the wonderful party you gave me on my retirement from Ames.

It was a pleasure to work with all of you and I wouldn't have missed it for anything.

Sincerely,
Maxine Brown"

Explorer Post 12 Reorganizing

Explorer Post #12 is being reorganized. The Special Interest Explorer Post for young men and young ladies, ages 15-20, has been operating successfully for the past two years here at Ames. Many young people have had an opportunity to understand more about the field of Astronautics through this important program of the Boy Scouts of America's Explorer Division. It has helped many of them in choosing a career.

TURNOVER

The turn-over of young people and adult leadership creates new openings in the Explorer Post. For this reason Explorer leaders would like to meet with any employees interested in helping to make the Center's Explorer Post a continued success at 12:30 p.m., June 15 in the private dining room of the Ames Cafeteria. Special Interest Explorer Posts are successful in most of the large industries in the area and employees have found real satisfaction in participating.

Your interest in continuing the Ames Explorer Post would be appreciated.

Employee Reminder

Employees are reminded to be certain that their qualifications, special training and educational achievements are a matter of record in the Records and Reports Branch.

You may wish to send an updated application form 171 or supplemental experience and qualification statement form 172 directly to Mail Stop 241-5 so that it may be included in your official personnel folder.

Ames Airings

. . . by Jeanne Richardson

STANTON GOLDING, Computer Operations, and his wife Miriam just returned from a five-week trip to Italy. Although they hit most of the big cities (Rome, Venice, Florence, etc.) they spent most of the trip in small towns where foreigners seldom tread. Stanton said that his "emergency only" knowledge of Italian really got a work out in those villages where no one had ever seen an American.

Those were the places he and Miriam liked the most. According to them, the people of Northern Italy are so warm and freindly that very little language is needed.

One little town they especially loved was Bergamo. It is actually two towns - one an ancient walled city high atop a plateau and the other a modern town below. It was so quaint and freindly that Mrs. Goding had to be talked into leaving.

Mr. Golding recommends the Ital rail pass highly. For $75 you can travel anywhere in Italy, for one month on their excellent railroad system.

PAUL DROLL, Vehicle Systems Design, and his wife, Shirley, did it again, and they're glad they did. His name is Kurt, and he was born May 24 at (like all tradition-loving babies) 2:30 a.m. at Stanford. Paul claims he was born at the Stanford Hilton.

At the moment he weighs 6 lbs. 3 oz., but he's growing. He joins a brother.

Special Discounts Offered to Personnel at Ames

JEWELRY: Michael's Jewelry, Moonlite Shopping Center, Santa Clara, and Princeton Plaza, San Jose.

BULBS: Hollands Glory, Inc., bulb growers and exporters of Sassenheim, Holland are offering Ames employees a special flower bulb plan of over 103 varieties. Bulbs are shipped directly to the employee's home during September and October for fall planting. Costs for postage and handling at port of arrival are taken care of by the vendor, and are included in the original price as quoted. Order forms and catalogs with full details are available in The Astrogram Office. A bonus of extra bulbs will be given without charge for all orders received before July 15.

GOLF

. . . by Kay Bruck

The May tournament was held at Sunol Cypress on the 22nd. The co-chairmen, Jerry Dickson and Ron Denison reported the following as winners in the best 3 ball - 4 man scores:

1st Place Team-Yuko Asato, Herb Ginoza, Clark White, and Vance Oyama.

2nd Place was tied - Frank Lazzeroni, Mitch Radovich, Gene Garis and Elmer Hampel made up one winning team. The other was Elmer DeBevoise, Owen Koontz, Bill Thompson, and Barry Scott.

4th Place Team - Bill Gideon, John Mulkern, Jerry Dickson, and Tom Itow.

Closest to the Pin Winners were: Roy Griffin and Don Davis.

Other heroes of the day, deserving special mention were: Fred Carpenter with a 72 low gross and Vance Oyama with a 63 low net.

The June tournament at Pajaro on June 5 yielded the following best ball two-some winners according to chairmen, John Rakich and Paul Kutler:

1st Flight: 1st Place - Larry Hochstein and Herb Ginoza; 2nd place-John Mulkern and Bob Eddy; and 3rd place-Owen Koontz and Paul Kutler.

2nd Flight: 1st place-Tom Itow and Ken Souza; 2nd place-Barry Scott and Elmer Hampel; and 3rd place-(a tie) Vance Oyama and Kay Bruck; and Jim Silver and Yvonne Sheaffer.

Nearest to the pin on 2nd and 14th holes were Ron Denison and Fred DeMuth respectively. Longest drives on the first hole were by Owen Koontz and Lee Seegmiller.

JOGGERNEWS

. . . by Jim Woodruff

The new Joggernaut officers elected June 3 are: Vito D'Aloia, president; Jerry Barrack, vice president; Bruce Castle, secretary-treasurer; and Paul Sebesta, racing committee chairman. Obviously, the club is in good hands. Dues, still $1, are payable.

Saturday, June 5, runners had a choice of a 7.4 mile run or a 17 mile run on the 17 mile drive. Bruce Castle, George Lenahan, and Gay Castle finished the 7.4 mile run in 51:05, 52:31, and 74:31, respectively. Vito D'Aloia, Jim Woodruff, and Dale Shute finished the longer run in 2:01:20, 2:16:21, and 2:22:57, resectively. Jim did the 17 miles with the same average pace as he did the 7.4 mile last year.

FASTPITCH SOFTBALL

. . . by Jim Myers

NASA was assured of a tie for the championship of the first half Mt. View Fast pitch 'B' League when they soundly defeated the Apaches 10-0 bringing their record to 5 - 1. This game was one of all-around team effort. Excitement was produced by Mike Green who had three solid raps and pitch hitter Dean Jaynes who rapped a pitch over the left fielders head for a stand-up double, with bases loaded. This was best game NASA has put together so far.

Special tribute must be paid to Bob Corbett who has now pitched two one-hit games and struck out ten opposing batters.

If necessary, a play-off will be played June 15.

BOX SCORE

PLAYER	P.	AB.	R	H	RBI
M. Green	lf	3	1	3	3
E. Lampkin	cf	3	1	2	1
B. Ganzler	2B	4	0	0	0
J. Myers	3B	3	2	1	0
B. Scott	ss	2	2	0	1
B. Bell	c	3	0	0	0
B. Randle	1B	3	1	1	1
P. Wilcox	rf	2	2	2	0
B. Corbett	p	3	1	1	1
D. Jaynes		1	0	1	3

SOFTBALL

. . . by Grantland Wheat

The Fighting Pumas closed in on the first-half title with two victories in the last two weeks. On May 27 they overcame an early TGD lead, and went on to defeat the Gassers 11 to 7. Then June 2, the solid Puma defense helped their pitcher, Saxinger to his second career shutout over Space Science by 15 to 0.

MFB also scored two wins. The first was a well-played 4-2 victory over RFE on May 27. Then they continued the "Slide of the Instrumentals" with a 9-7 win on June 1.

Standings through June 4:

	W	L	GB
F. Pumas	4	0	-
MFB	2	1	1 1/2
S. Science	1	1	2
TGD	0	1	2 1/2
RFE	0	2	3
Instrumentals	0	2	3

2nd Edition Published

Paul F. Byrd, Problem Definition and Analysis Branch, is senior author (with Morris D. Friedman, formerly of Ames) of "Handbook of Elliptic Integrals for Engineers and Scientists", 2nd Edition, Revised. The book, just published by Springer-Verlag, appears as Vol. 67 of their internationally renowned mathematical series, "die Grundlehren der mathematischen Wissenschaften in Einzeldarstellungen."

WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in legible writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

AUTOMOBILES

For Sale-Ford 1963 1/2 Galaxie 2-dr. hdtp., r&h, p.s. & a.t.. New tires and brakes. Exc. cond. $500. Phone 968-1814 after 4 and weekends.

For Sale-1960 Corvair Coupe, 3-speed, body and paint very good. Low mileage on valve job and clutch overhaul. Tires and battery o.k. Transmission or rear-end-here's a knucklebusters chance to shine. Best offer above $75. Call 252-5882 after 5.

HOUSING

For Rent-Lakefront cabin in High Sierras. By the week or month. Call 243-7377.

For Rent-Tahoe City cottage near lake and private beach area. Sleeps 6. Spring rate $70/wk or $30/wknd. 328-4642.

For Rent-So. Shore Lake Tahoe, 3-bedroom home, sleeps 8, large deck, AEK, fireplace. Close to everything, yet quiet. $100 per week. July and June only. Call 241-7909.

MISCELLANEOUS

For Sale-Cat Minibike 3 hp., see to appreciate, call 247-2051, after 4:30.

For Sale-Registered Siamese kittens, 1 male, 1 female. Championship bloodlines. Chocolate point, $20 each. 253-4475.

Wanted-Used guitar, call Norman Chigier, 326-0967.

For Sale-Portable television, 21-inch screen. $65. 493-1638 after 5 p.m.

For Sale-Honda 350 SL, Blue, 1970, 8000 miles, perfect condition, $625 or best offer. Phone 732-6518.

For Sale-Honda 350 CL, Orange, 1970, perfect condition, $600. Phone 732-6518.

For Sale-Sleeping bags (2). Extra warm, 5lbs. Dacron fill. Ideal for camper, trailer, boat, etc. Too heavy for backpacking. $25 ea. or $40 pair (can zip together) Call 329-8219.

Needed-Any back pack equipment, packs, frames, straps, sleeping bags. Pack tents and etc. To be used by Boy Scouts who can't purchase. Tax deductable. Call John Hawkins at 248-6295 after 5.

For Sale-One men's and 2 women's bikes, 322-3143.

Swimming Lessons-for all ages, preschoolers to adults. YMCA and Red Cross qualified lifeguard, experienced instructor, afternoons, Shelley, 967-6850.

Wanted-"Work" of any kind for boy and girl of sixteen. Hard workers, will do for low wages. Summer work only. Able to do painting, garden work, house work, baby sitting, car work, etc. Call Charles DeCarli at 379-7635.

For Sale-Doberman pups, purebred, no papers. Call 264-4641.

WANTED-Any information leading to a female Irish Setter pup of AKC champion stock or any litter expected soon. 241-6495 after 5 p.m.

For Sale-1971 Honda CB 125. $400. Steve Mathews, 736-1357.

For Sale-1965 Ford Galaxie 500, V8, auto. trans. power steering and brakes, excellent condition. $725, call Tom at 377-9214 after 5 p.m.

Wanted-Luggage rack for VW Bus. M. Wells 329-8219.

Toastmasters

Two Ames employees elected to serve as officers of the Jet-Stream Toastmaster Club #2624 during 1971 are: Frank C. DeRosa, Contract Management Branch, president of the club; and Arthur F. Okuno, High-Enthalpy Research Branch, the Sergeant-at-Arms.

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National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

Possible Pattern for Origin of Life Found

Scientists at Ames Research Center have discovered a remarkable coincidence, which may show a basic pattern for the process of chemical evolution believed to lead to the origin of life.

An Ames team, led by Dr. Cyril Ponnamperuma, has found in a second meteorite exactly the same 18 amino acids, plus two pyrimidines, that were discovered last December in the Murchison meteorite.

The recent discovery of amino acids, building blocks of living cells, in the Murchison meteorite appears to be the first conclusive proof of extraterrestrial (non - earthly) chemical evolution, the chemical process most scientists believe led to the origin of life on earth. Finding these life materials in a second meteorite strengthens the case for the chemical evolution theory and increases the likelihood of life elsewhere in the universe - created by chemical evolution.

The Murchison meteorite fell near Murchison, Victoria, Australia in September, 1969. The newly-analyzed meteorite, known as the Murray, fell in Kentucky in 1950.

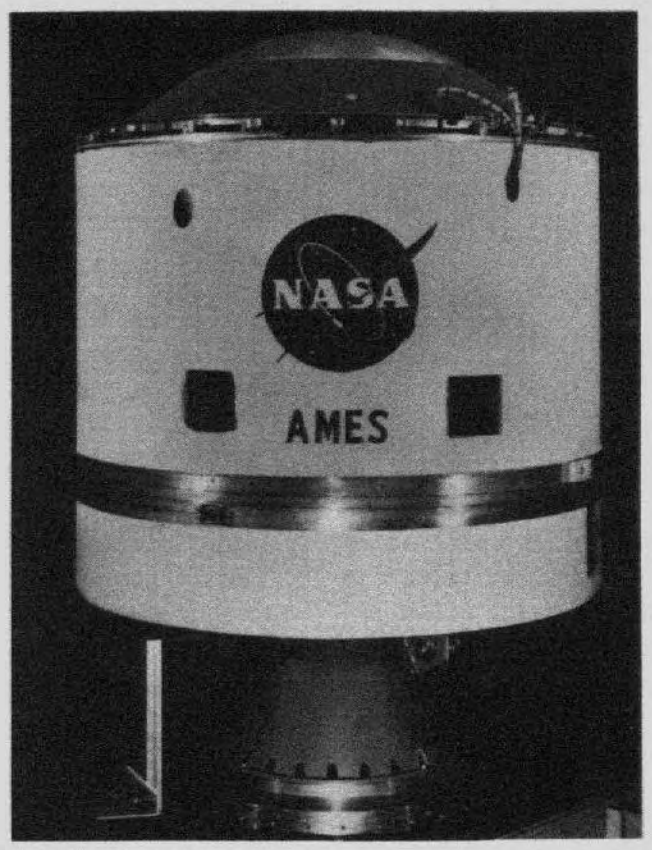
Dr. Ponnamperuma described the new find to a meeting of the New York Academy of Sciences last week.

"We can only speculate at this stage," he commented, "but the finding of this identical complex pattern of amino acids and pyrimidines in two meteorites could mean that this is a basic phase in the chemical characteristics of the materialsof our universe.

"Starting with these 18 amino acids, it would be theoretically possible to build up a living organism."

Both the Murchison meteorite, and the Murray, are Class II carbonaceous chondrites (two to three percent carbon). Both are believed to be about 4.5 billion years old,

(Continued on Page 4)



THE PAET SPACECRAFT . . . consists of the entry vehicle (heat shield can be seen at top of photograph); the separation system the large cylindrical unit in the middle; and the "E" section at the base which is mated to the fourth stage of the Scout launch vehicle.

HONORARY RECOGNITION . . . The first NASA Special Achievement Awards for accomplishments in the Ames Equal Employment Opportunity (EEO) program were presented recently to Mrs. Margaret F. Vaughn and Mrs. Ruth V. Wick (center, l to r), volunteer teachers for the Center's Out-of School Neighborhood Youth Corps program. The certificates of merit which they received from the Director, Dr. Hans Mark (left), recognized their effective teaching skill and dedication to the student-workers in the NYC Program. For more than two years they have been instructing students who had not finished their high school education. Many extra hours of tutoring along with a comprehensive teaching program helped more than a dozen students to earn a high school diploma, which in turn will qualify them for better job opportunities. Attending the ceremony as a representative of the EEO program was Mrs. Dorothy M. Evans (right), Federal Women's Program Coordinator for Ames.

Ames PAET Launch Successful

The Ames-managed PAET (Planetary Atmosphere Experiments Test) was launched Sunday, June 20, from NASA's Wallops Station in Virginia and performed flawlessly, according to a report from the Project Manager, David E. Reese, Jr., Assistant Chief of the Vehicle Environment Division. Total flight time was just under 15 minutes from launch to splashdown.

PAET, 36 inches in diameter and 25.2 inches long, was designed to investigate means of determining the structure and composition of an unknown planetary atmosphere. It is one step in providing the technical base necessary for advanced planetary exploration to Mars, Venus, and eventually the outer planets. Objectives of the atmosphere structure experiment were to determine the pressure, temperature, and density changes with altitude, and the mean molecular weight of the encountered gas, or atmosphere. Accelerometers, pressure sensors, and temperature sensors were included in the instrument package. Composition was determined by two experiments, a quadrupole mass spectrometer, and a multi channel radiometer

In the launch sequence the vehicle went over apogee at 1.29 million feet within seven minutes after lift-off. Immediately after launch, telemetry contact with the Ames payload was picked up and maintained throughout the flight through receiving stations at Wallops and Bermuda, two telemtry ships and one aircraft.

Separation and despin of the vehicle occured as programmed; the entry conditions were at 400,000 feet altitude, velocity of 21,327 fps (within 300 fps of nominal), and an entry path angle of 39.76 degrees (40 degrees was the nominal).

During entry the atmosphere structure instruments functioned perfectly. The accelerometer indicated a peak deceleration of 75.8 Gs; pressure sensors read a peak value of 580 mm of mercury, decreased to 37 mm, and increased again to 750 mm at splashdown. The temperature sensors deployed at Mach 2 and within one second read the atmospheric recovery temperature of 127 degrees C. Splashdown temperature was a comfortable 20 degrees C. The mass spectrometer identified nitrogen, oxygen, carbon dioxide, and an isotope of nitrogen with molecular weight of 29.

Radiometers in the experiments package began receiving signals as

(Continued on Page 4)

Ames Team Creates Space Shuttle Model

Ames research scientists, engineers and craftsmen working together as a team have designed and built a one-fortieth-scale aeroelastic model of a space shuttle.

An aeroelastic model is a nonrigid wind tunnel model whose structural behavior simulates that of an actual vehicle under flight conditions. Such a model was designed for Ames research scientists to investigate particular space shuttle configurations. Results of the wind tunnel tests conducted with the model will be used to investigate potential problem areas associated with configurations for space shuttle design.

The design requirement was to produce a model that would be dynamically similar to the actual vehicle. In that way the model, under tunnel conditions, would behave in a manner similar to the actual vehicle's behavior in the flight mode being studied.

Principal Investigator for the project was Ames research scientist Lado Muhlstein of the Aeronautical Structures Branch. He expressed a need for a model suitable for sting mounting and one that would be adaptable to three basic winged and wingless configurations.

The engineering design team was headed by Project Engineer Wayne O. Hadland, with Allan Bakke and Mladen Chargin, all of the RFE Branch. One of the real challenges facing this group was reconciling the apparently conflicting performance requirements of scaled mass and stiffness with aerodynamic loading. Their unique sting-mounted support system was one of the design features that helped overcome this difficulty.

While phases of the design were still on the drawing board, construction of the aeroelastic model was underway in the shops of the Technical Services Division.

Coordinating the work in the shops was the responsibility of Albert J. Petretti and Lester G. Pinkham of the Planning Office. They were supported by the shop foreman, Feo Corsini, Machine Branch, Edwin R. Vernon, Metals Fabrication Branch, and Lester W. Buettner, Materials Processing Branch. The three branches worked as a close-knit team throughout the project, each dependent on the other for completion of the overall research package on schedule.

Mr. Petretti talked about the different construction techniques used on the model and the forked sting mounting. "The latter," he said, "was a unique project in itself, requiring many hours of set-up and machining to prepare the different pieces for welding. Special mandrels were also machined for the innovative electron beam welding procedure necessary to satisfactorily join the booster and orbiter spine tubes. And many more hours were spent on drawings and detailed planning for manufacture of brackets for the vertical and horizontal tail, and the straight and delta wing."

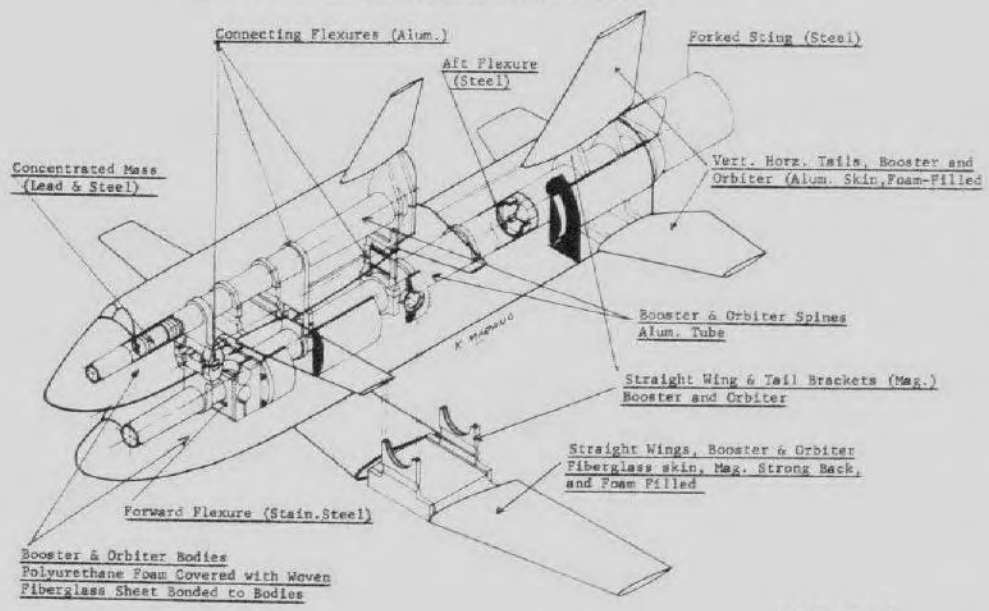
Hand crafting and shaping of major components having aero and structural dynamics requirements were responsibilities of the Model Shop. Much of the fabrication effort was accomplished with ease because of the craftsmen and their wealth of past experience. However, one of the most difficult problems was foaming in place the booster and orbiter spines into their respective body molds. The strategic placement of the highly instrumented connecting leads and perfect alignment of the spine in relation to body axis were major requirements. There was only one chance - they had to be right the first time. The final results were gratifying.

The technicians in the Structural Fabrication shop had the difficult task of bending and shaping from thin aluminum and magnesium the outer skin of the vertical and horizontal tails, and delta wings. Different methods were used to meet unusual situations in bending this outer covering for the wings and tails, and in many instances several jigs and fixtures were required. Again the skills acquired by the technicians during many years in the trade played an important role in accomplishing the mission.

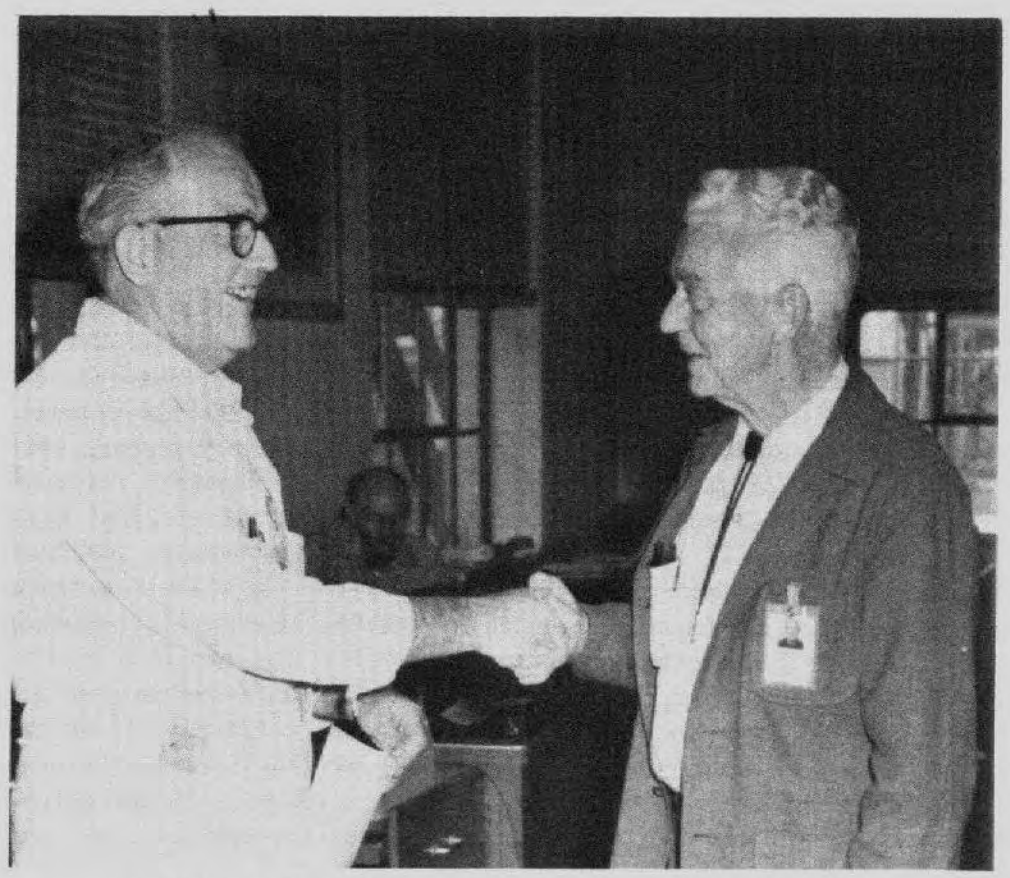
Although the instrumentation work for the model was accomplished outside the Center, it was supervised by Carl D. Kolbe and Willard G. Smith of the Research Instrumentation Branch. Calibration of the model prior to the tunnel tests was done by Eugene C. Duncan and Charles N. LaVarnway, also in the Research Instrumentation Branch.

The model is completed and has undergone several weeks of intermittent wind tunnel testing. An early report indicates the project to be highly successful.

SCHEMATIC OF SSV AEROELASTIC BUFFET MODEL



1/40th SCALE



A JOB WELL-DONE . . . earned a NASA Special Achievement Award and congratulations for Frank W. Cleary (left), Storage and Shipping Section, from his boss John E. Bonnell (right), head of the section. Mr. Cleary was cited for the continued high performance of his assigned duties and his ability to solve difficult and complex logistics problems in support of the Center's research projects. In recognition of his efforts he received a letter signed by the Ames Director, Dr. Hans Mark, commending him for his significant contributions and a cash award.

Palo Alto Red Cross Course Offered

A multi-media Standard First Aid Course will be held Saturday, June 26 from 9 a.m. to 5:30 p.m. in the Red Cross Chapter office, 400 Mitchell Lane, Palo Alto.

Participants are asked to bring a self-addressed, stamped envelope and a sack lunch. Coffee and soft drinks may be purchased. Women are requested to wear slacks.

The course registration is limited to 10 students with an enrollment fee of $5 payable during the first class hour. To enroll in one of the courses offered call the Red Cross office, 322-2143.

astrogram
Room 134
Admin. Mgt. Building
Phone 2385

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Editor . . . . . Dot Evans
Reporters . . . . . NASA Employees

Deadline for contributions:
Thursday between publication dates

ASEE-NASA SUMMER FACULTY INSTITUTE

Ames will take part again in the ASEE-NASA Summer Faculty Institute-1971 Aerospace Technology Seminar. The seminar, which begins June 29, will be held in the Skilling Building, Room 080 at Stanford University.

Cochairmen for the seminar are Ames Director, Dr. Hans Mark and Stanford Professor Max Anliker. The seminar is open to all members of the Stanford Community and all employees of Ames.

Below is the seminar schedule;

Tuesdays* / 8:00 P.M. / Skilling Building, Room 080 (Auditorium)

June 29 **Dr. A. Zaffaroni**, President
Alza Corporation
"Systems Approach to Therapeutics"

July 6 **Dr. Harold P. Klein**, Director of Life Sciences
Ames Research Center
"The Search for Life on Mars"

*July 14 (Wednesday) **Dr. William F. Baxter**, Professor of Law
Stanford University
"Comparative Pollution Control Systems"

July 20 **Dr. Howard S. Seifert**, Professor of Aeronautics and Astronautics
Stanford University
"Feasibility of Lunar Transportation by Hopping"

July 27 **Sir Geoffrey Taylor**
Cambridge University
"The Early Days of Aeronautics"

August 3 **Dr. P. J. E. Peebles**, Associate Professor, Department of Physics
Princeton University
"The Early Universe"

August 10 **Dr. Nicholas Perrone**, Director of Structural Mechanics Program
Office of Naval Research
"Vehicle Crashworthiness and Bodily Injury"

Space Technology to Aid Smog Research

A cooperative smog research program involving space scientists and California air pollution experts will begin late this month and will feature a series of airborne investigations over the San Francisco Bay Area and the Los Angeles metropolitan area. Purpose of the flights is to trace the photochemical production of pollutants and their despersion in the atmosphere.

Initial plans call for twelve flights yearly over a three-year period. A Cessna 401 aircraft will carry 500 pounds of research equipment to altitudes of 17,000 over the test areas.

The program is a joint effort between Ames and the California Statewide Air Pollution Research Center with headquarters at the University of California at Riverside.

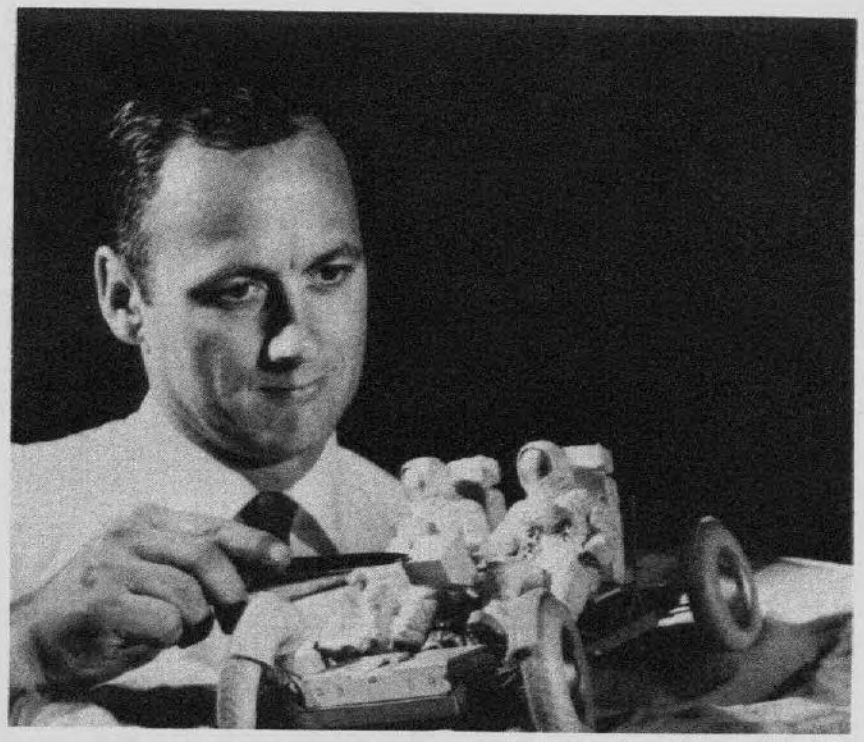
NASA's phase of the program is directed by Dr. Ronald F. Reinisch and Hermilo Gloria of the Materials Research Branch at Ames, Dr. James N. Pitts, Jr., Director of the Statewide Air Pollution Research Center, will be in charge of the University's portion of the project. Participation by NASA in smog research techniques developed at Ames to explore the evolution of planetary atmospheres and for investigations into the origin of life.

The Center also will contribute its broad experience in conducting airborne research.

Data collected by the team will be available to various researchers in the Air Pollution Control Office of the U.S. Environmental Protection Agency (EPA), the California State Air Resources Board, the Los Angeles Air Pollution Control District, the San Francisco Air Pollution Control District, the Association of Bay Area Governments and other NASA Centers involved in earth resources studies.

Unlike previous atmospheric studies which have measured quantities of atmospheric pollutants, the Ames-APRC plan emphasizes a study of the dynamics of the photochemical reactions involving oxides of nitrogen, hydrocarbons, ozone and solar ultraviolet light at different altitude and locations. Spectroscopic, chemiluminescent, and gas chromatographic techniques will measure specific pollutants and compounds unique to pollution sources. Of special interest are dispersion patterns of pollutants at various levels in the atmosphere.

One of the uses of the data will be accurate three-dimensional computer mapping of pollutant concentrations.



AMES' TELEVISION STAR . . . Fred Baker, Measurement Sciences Branch, is pictured above with the scale model of the Apollo 15 Lunar Model he used during a recent appearance on the Captain San Francisco Show. Fred appears regularly as a representative of NASA on the children's program, televised over Channel 44, KBHK-TV. He explains various facets of the NASA missions to an audience of over 500,000, aged primarily between 5 and 12 years.

NASA Missions Explained on T.V.

A new effort is being made to inform the public of NASA's work. Ames' Fred Baker, Measurement Sciences Branch, explains NASA's accomplishments to an audience of over 500,000 twice a month over KBHK-TV, Channel 44 in San Francisco.

REGULAR GUEST

Fred is a regular guest on the Captain San Francisco Show, a program aimed at the 5 to 12 year old age group. The show, hosted by Sergeant Sacto, features Popeye cartoons, The Three Stooges, and informative guests. Mr. Baker appears alternately with a fireman, bat-boys and girls, local zoos and various special guests.

A research engineer who had never before worked as a performer, Fred gives his presentations ad-lib. The audience is made up primarily of youngsters, so he keeps his discussions concise and simple.

Since first appearing on the show in April, he has explained facets of the Mariner and Apollo missions, Space Food and Astronaut Training. During one interesting program, a space suit was demonstrated, using an actual suit as a prop. Fred explained why the suit is needed and what the effects of space travel would be on man without such a suit.

Future programs will include a demonstration of the Apollo 15 Lunar Rover, using a one-tenth scale model, talks on the Astronauts personal hygiene in space and a number of other interesting subjects. Fred hopes to enlist the help of other Ames employees and give them an opportunity to appear on the show.

Mr. Beam Attends Stanford Program

Benjamin H. Beam, Assistant Chief of the Research Facilities and Equipment Division, has been accepted for participation in the 1971 Stanford Executive Program which began its 20th consecutive year on Monday (June 21).

The primary goal of the eight-week program is the advancement of professionalism in management. Each year a broad spectrum of outstanding executives from all fields of endeavor and from all parts of the world are attracted to the Program. They are involved in an intensive daily schedule of classes, individual study and small group discussions. At the end of the Program participants are awarded certificates of completion and become alumni of the Stanford Business School.

ARA Beach Night

The second annual ARA-sponsored Ames Family Night at Santa Cruz Beach and Boardwalk will be held Friday, July 23. Unlimited rides will be offered from 7 to 11 p.m. for $2.50 with an exchange coupon now available in Room 107, Building 240.

PAET LAUNCH

(CONTINUED FROM PAGE 1)

soon as the launch vehicle shroud separated and showed a peak intensity of 2.2 volts in the CN violet channel.

The vehicle survived splashdown and floated for one hour and 33 minutes, sending out telemetry signals during the entire period. A search aircraft located the entry vehicle and kept it in view while the recovery ship, the U.S.S. Vanguard, steamed the 18 nautical miles from its original position. The payload was taking on water through its vents, however, and sank before recovery. Recovery was not a requirement of the mission.

Since the completion of this highly successful launch, the project crew has been collecting data tapes and running them through the computer in the Ames telemetry van at the launch site.

LAUNCH CREW

On Thursday (June 24), a pleased launch crew, headed by Mr. Reese, will return to the Center. The team includes Robert M. Reynolds, HFF Branch, Spacecraft Integration Manager; Simon C. Sommer, HFF Branch, Deputy Manager of the Spacecraft and Spacecraft Test Conductor in the launch count down; George E. Falkenthal, RFEE Branch Spacecraft Power and Pyrotechnics Engineer; James C. Van Ess, Vehicle Guidance and Control Branch, who prepared the accelerometers and assisted in monitoring the power and pyrotechnics; David H. Brocker, Simulator Computer Systems Branch spacecraft data computer operator, assisted by Yutaka Matsumoto of the Vehicle Guidance and Control Branch. Telemetry monitor in the Ames van was Donald E. Humphry, Electronic Research Branch, and Roger C. Hedland of the same branch, performed a similar function in the main telemetry station at the launch site. John R. Mulkern, R & QA Branch, and Robert E. Barrow, were in charge of quality control of the spacecraft in the blockhouse and on the launch pad. Robert Blomseth of ESB stood by to make electronic repairs to the spacecraft if needed. The launch team also included several individuals from the Goddard Center; Hasso B. Niemann and James Shannon operated the mass spectrometer from the Ames telemetry van while Ames' Emanuel Gross directed telemetry from the mass data acquisition center in Bermuda.

Throughout pre-launch and launch activities open communication lines to the Center relayed events to a waiting group which included the Director, Dr. Hans Mark, Glen Goodwin, Director of Astronautics, Alvin Seiff, Chief of the Vehicle Environment Division, and Thomas N. Canning, Chief of the HFF Branch. One of the most anxious and interested staff members monitoring the launch from Ames was Alfred G. Boissevain, who was the spacecraft integration engineer, but could not be at the launch site because of a prior committment.

Launch vehicle for PAET was the Scout, NASA's only solid propellant launch vehicle with orbital capacity. The Scout program is managed by Langley Research Center.

Ames Airings

. . . by Jeanne Richardson

JOHN McDERMAID, Management Procedures Office, is the guy who writes all those celebrated revisals and additions to the Ames Correspondence Manual. He is thought of fondly by the secretaries of Ames because of the witticisms with which he enlivens those otherwise dull Transmittal Notices.

John got so tickled at a letter sent to Stock Issue by JAN LOZIER, Aeronautics and Flight Mechanics, that he printed it in his latest work, Transmittal Notice ACM-17. It's too long to repeat here, but well worth reading - it's on page two of the Notice.

If you stroll down the hallowed halls of the Life Sciences Building (239) you can't help but notice the exceptional quality and quantity of graffiti decorating office doors and bulletin boards. There is one particularly spectacular office (even for the Life Sciences Building) which boasts; a regulation size seat from a commercial airliner and a mobile made up of a shrunken head and a bright yellow monkey with a cigaret in its mouth. Among the more significant bits of graffiti in the building is a headline clipped from that journalistic leader "The Astrogram", which reads; "Low Acting NASA Director." It's nice to know our work is read and remembered.

FASTPITCH SOFTBALL

. . . by Jim Myers

NASA defeated the El Camino Flamers by a score of 8-5, bringing the Ames team record in the Sunnyvale 'B' League to 3-2 and at least a share of second place.

BOX SCORE

Player	Pos.	AB	R	H	RBI
E. Lampkin	LF	5	2	0	0
B. Ganzler	2B	4	3	2	2
D. Kornreich	CF	4	2	4	2
J. Myers	3B	4	0	1	1
B. Scott	SS	4	0	0	1
B. Bell	C	4	0	1	0
B. Randle	1B	4	0	1	0
P. Wilcox	RF	4	1	1	0
D. Banducci	P	4	0	2	1
	Totals	37	8	12	7

WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

AUTOMOBILES

For Sale-1968 Pontiac Bonneville, Air p/w, r/h, vinyl top, 2-dr. Call 264-6491 after 5 p.m.

For Sale-1968 Valiant 2-door, stick shift $1000. Call 245-6924.

For Sale-1957 Chevy. Cherry body. 327 eng. with 310 isky., cam, eld., high rise manifold with 750 duel inlet holley carb. Saderson Fenderson headers 5 inch, drop spindales, 4-speed tl0 trans. Hurst linkage 4.11 rear end. Make offer. must see to appreciate. Call Mike, 961-4814.

For Sale-1965 Ford Galaxie 500 XL convertible. 390 engine AT, PS, PB transistorized ignition, paser magnum unit, fog air system, coolant recovery system, Franz oil filter, transmission oil cooler, air horns, bell, glass back window, new armrests, instrument cluster (water, oil, Amm.) rear end completely overhauled, front end completely overhauled. Excellent brakes, new brake cylinders (all four). This car is exceptionally clean. Excellent mechanical condition, must see to appreciate. Call John S. Matthews, 379-7255.

For Sale-1955 Buick, new battery, $75, call 243-5733, after 5 p.m.

For Sale-1961 Sprite Bug-eye, roll bar, wide rims, needs some body work. Over $300 in spare parts, 1100 cc engine, MK III transmission, rear end, generator, starter, etc., etc. $700 all. 739-2195.

For Sale-1970 Vokswagen, radio, dark blue, $1600. Call 323-4520 eves or weekend.

For Sale-1965 VW Bus - rebuilt engine, new transaxle, $1000. 246-0739 after 5 p.m.

HOUSING

For Sale-20x40' mobile home. Asking $9300, Santiago villa. 5 minutes from Moffet Field. Avacado ww carpets, drapes, kitchen, appliances, and bathroom fixtures. Carpeted porches and steps, red lava rock landscaping. 1 year old - like new. Mrs. Binnard 968-9273.

For Sale-by owner... 3-bedroom, 2-bath, family room, fireplace, AEK, carpets, drapes, Lge. landscaped yard, patio. Assume 6 ¼ V.A. loan. Northeast valley. 262-5103.

Sublet-Apartment for sublet in Palo Alto near El Camino and Arastradero, July 6 to Sept. 4. Completely furnished and equipped. Two bedrooms, pool, quiet surroundings, No children or pets allowed. $192/mo. Call 321-0625.

For Rent-3 bedroom house, Saratoga. 867-2098.

For Rent-Modern 3-bedroom, 2 bath home on Pioneer Trail, S. Lake Tahoe. 1 mile from Stateline. $150 wk. Phone 321-8745 after 5 p.m.

For Rent-Vacation cottage, Sunnyside area of Tahoe 2-bedroom, walk to beach or marina, $95 per week, $45 per weekend. Call 328-4642.

For Rent-Two story architect-designed cabin in the historic and beautiful Donner Pass area. Many lakes and streams nearby. All modern conveniences plus large deck, stone barbeque, and canoe. Available by the week in late July and early August. Leo Poppoff # 323-2375.

Pre-Listing Sale-6 miles to NASA. Spacious 4-bedroom, 3 bath, large screened porch, plus outdoor patio area. Sunnyvale-Cupertino schools area. $41,500, 245-8422.

MISCELLANEOUS

For Sale-Registered set of four 1968 Spaulding Executive Woods; 1-21/2-31/2-41/2 Rubber grips, medium shaft. D-3 swing weight hardly used. Will sell the set for $50 (less than half cost of new set). Call 948-5250.

For Sale-Help! Moving! Couch will not fit in new house. For sale: 8 1/2 ft. avocado green on what, custom-made couch. 3 1/2 years old. $650 when new. Excellent condition. Best Offer. Call 347-5654.

For Sale-Mirror dinghy 11' sailboat, sloop rig, including 62 square foot spinnaker, complete with oars, paddle and car carrier. $550. 262-5103.

For Sale-Minolta SR1, 35mm Camera; 55 mm F1.7 lens. $95 or best offer. Call Gene Firpo after 6 p.m. 964-0659.

PATTERN FOR ORIGIN OF LIFE

(CONTINUED FROM PAGE 1)

and are of a type of meteorite thought by scientists to have originated in the asteroid belt, between the orbits of Mars and Jupiter.

The team of Ames researchers working with Dr. Ponnamperuma included Drs. James Lawless, Keith Kvenvolden and Clair Folsome, and Miss Etta Peterson. Dr. Carleton Moore, Director of the Center for Meteorite Studies, Arizona State University, also took part.

Findings with the Murchison and Murray meteorites are not the first reports of life materials getting into the meteorites after their impact with the Earth.

The cases of the Murchison and the Murray meteorites differ from these because of several proofs of non-biological and non-earthly origin, and because of the precise identifications made.

New Location for Discount Cards

For the past seven years the staff of "The Astrogram" office has arranged for, and distributed, membership cards and special discount offers as a service to Ames employees. Last week this responsibility was assumed by the Ames Recreation Association (ARA) as an official function. All discount cards are presently being distributed by Peggy Larson, Building 240, Room 107, ext. 2936.

For Sale-Black Naugahyde sofa $147 new, now $50. Bob White, 255-1072.

For Sale-Sterling teaspoons and salad forks - Royal Danish $8 and $10. 252-1229 after 7 p.m.

For Sale-Gold velvet sofa - 7' long excellent condition. Cost $350, sell $175. Red velvet antique love seat $75. 377-1311, anytime.

For Sale-Girl's Schwinn Bike - 24". Excellent condition $32, 739-2306.

For Sale-Sewing machine, used, Kenmore, in good condition. Limed Oak consolette cabinet. $20, Harry E. Bloomquist, 252-6229.

Ride Needed-7:30 to 4 shift. Vicinity of Cherry Chase or Sylvan and El Camino. Call 961-9181 after 5 p.m.

For Sale-Binoculers, extra wide angle 7:50 - 35. $22.50. Milpitas, 263-0795.

For Sale-Wash machine, Sears. In working order. $25. Phone 245-6994.

GARAGE SALE-Saturday & Sunday, June 26 and 27. Occasioned by move. 15.5 cu. ft. Amana refrig. freezer combination, $135. 11 ft. Coldspot refrigerator $35. Power mower (trimmer) $110, elec. hedge trimmer, hardware for double sliding garage doors, unicycle, Woodland Modular ash bedroom furniture (desk, two extra long single bed-mattress and box springs on steel frame with bedspread and matching drapes, desk swivel chair; also matching Maytag washer and dryer, $100 for both; 2" steel tubing for swing set frame (disassembled). 9 x 12 beige Alexander Smith wool rug with double flat foam cushion, 9 drawer desk with matching formica top, and numerous other items. Call 245-2165.

Wanted-Passengers to the Experimental Aircraft Association Annual Fly-in at Oshkosh, Wis. Aug. 1 - 7. Share aircraft expenses on single engine Aero Commander or Bonanza. Gordon Hardy. 736-8335.